

**REMARKS**

Claims 16-42 are pending.

Claims 16, 30 and 31 are independent claims from which the remaining claims depend directly or through intervening claims.

**DRAWINGS**

It is understood that the corrected drawings submitted with the Reply of June 21, 2002 have been entered.

**REPLY TO REJECTIONS**

**First Rejection**

Claims 1-2 and 4-8 were rejected under 35 U.S.C. 112, second paragraph for the reasons set forth in the first paragraph on page 3 of the Office Action. These claims have been cancelled and the rejection is moot.

The new claims presented do comply with 35 U.S.C. 112.

**Second Rejection**

On page 3, starting at the second paragraph, the claims 1-2 and 4-8 were rejected under the judicially-created doctrine of obviousness-type double patenting as being unpatentable over claims 4, 7 and 9 of U.S. Patent No. 6,163,631 (Kawanishi). These claims have been cancelled and the rejection is moot.

In order to reduce issues, and expedite prosecution, a Terminal Disclaimer is enclosed.

Accordingly, a double patenting rejection of the obviousness type based on Kawanishi is not applicable.

### Third and Fourth Rejection

Claims 1-2 and 4 were rejected under 35 U.S.C. 103(a) as being unpatentable over Paoli (U.S. Patent 5,228,049) in view of Andrews (U.S. Patent 5,175,643).

Claims 5-8 were rejected under 35 U.S.C. 103(a) as being unpatentable over Paoli and Andrews as applied to claims 1 and 2 and 4-8 above, and further in view of Sanders et al. (U.S. Patent 5,912,910). Actually, claims 5-8 were not rejected with claims 1, 2 and 4.

As the above noted claims have been cancelled, the rejections under 35 U.S.C. 103 are moot.

In order to be completely responsive, (37 C.F.R. 1.111), the new claims will be discussed with respect to applied reference explaining why the claims now presented are not obvious over the references applied.

With respect to independent claim 16, this claim includes, in combination, the structure of "the second layer region. . . semiconductor layer in the layer direction" appearing in the last two paragraphs of claim 16. Paoli and Andrews do not show or suggest at least these features of claim 16.

With respect to independent claims 30 and 31, these claims add details of "a light waveguide region". In the Office Action, it was recognized that "a light waveguide region" was lacking in the first two references, and Sanders et al., (U.S. Patent 5,912,910) was relied on to show this feature.

Claim 30 includes the structure of "a semiconductor laser region . . . or dielectric layer is buried therein" in the last two paragraphs of claim 30.

Claim 31 includes "the semiconductor laser region . . . a semiconductor layer is buried therein" in the last two paragraphs of claim 31.

Sanders fails to show the details of waveguide region in the context claimed even when combined with the first two applied references.

Accordingly, for the reasons set forth above, a *prima facie* case of obviousness does not exist.

With respect to the dependent claims, these claims are considered patentable at least for the same reasons as their base or intervening claims.

#### **OBJECTION TO CLAIM 7**

Claim 7 has been cancelled, and, accordingly, the objection is moot.

#### **CONCLUSION**

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Elliot A. Goldberg (Reg. No. 33,347) at the telephone number of (703) 205-8000, to conduct an interview in an effort to expedite prosecution in connection with the present application.

Pursuant to 37 C.F.R. §§ 1.17 and 1.136(a), Applicant(s) respectfully petition(s) for a second (2) month extension of time for filing a reply in connection with the present application, and the required fee of \$400.00 is attached hereto.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Respectfully Submitted,

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